English, and breaking up excessively long sentences for better clarity.

Respectfully submitted,
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Copies of the amended paragraphs, marked up to show the changes

page 1, line 10- page 2, line 3

In a conventional silent chain power transmission apparatus, an endless silent chain is employed which comprises a multiplicity of link plates interleaved by a multiplicity of connecting pins in a fingers-crossed fashion, as illustrated in FIG. [7] 8 hereof. Each link plate 100 has a pair of V-shaped teeth 10 each defined by inside and outside faces 1, 2 for meshing with teeth of a sprocket S as shown in FIG. 8 hereof. As can be clearly seen from FIG. 7, the inside tooth faces 1 are scooped out deeper inwardly than the profiles, symmetrical with the profiles of the outside tooth faces 2, of imaginary inside tooth faces 1' so that their interference with the teeth of the sprocket upon intermeshing can be prevented. Accordingly, pitch line Li of the inside tooth faces[, that is, a line passing parallel to pin center line Lp over two inside tooth faces 1 of the link plate at points where a distance between those two points becomes 1/2 of a chain pitch P equal to a distance between two pins of the link plate,] is positioned closer to the pin center line Lp than a pitch line Lo of the outside tooth faces[, that is]. The pitch line Li is a line passing parallel to pin center line Lp over two inside tooth faces 1 of the link plate at points where a distance between those two points becomes 1/2 of the chain pitch P, which is equal to the distance between two pins of the link plate. Similarly, the pitch line Lo of the outside tooth faces is a line passing parallel to the pin center line Lp over the two outside tooth faces 2 at points where [a] the distance between the two points becomes 3/2 of the chain pitch P.

page 2, lines 22-26

[Then, a] A quantitative analysis [is made on] of the polygonal motion may be made. As can be appreciated from FIG. 8, since a pitch angle of the silent chain C and the number of teeth N of the sprocket S have relations expressed by $\alpha = (360^\circ/N)$, the followings may be established.

page 5, lines 8-14

Moreover, due to the [chain] polygonal motion of the chain, a concave bottom surface defined between the opposed inner flanks or tooth faces of each link plate interferes with the edges of the teeth of the sprocket. Similarly, the edges of the V-shaped teeth of the link plates interfere with the root bottoms of the sprocket. As a result, partial wear and breakage are inevitable at the [interfered] interfering parts of the chain and sprocket.

page 5, lines 17-26

It is therefore an object of the present invention to provide a silent chain power transmission apparatus which can prevent up and down movements of a silent chain thereof, which are [caused owing] due to polygonal motion of the chain when the chain intermeshes with, and [gets] becomes seated on, a sprocket, [to] and thereby substantially reduce vibratory and impact sounds and fluctuation in tensioning of the chain, and which can prevent wear of concave bottom surfaces of link plates forming the chain, edges of V-shaped teeth of the link plates and the root bottom of the sprocket [to] and thereby improve durability of the apparatus.

page 6, line 26 - page 7, line 6

In a preferred form, the V-shaped teeth have tooth edges provided at a position where interference of the tooth edges with concave bottom surfaces defined between opposed [ones of

the] involute teeth of the sprocket[, which] <u>can be avoided. The interference</u> arises [owning] <u>owing</u> to the [chain] <u>chain's</u> polygonal motion amplitude when the outside tooth faces of the link plate are brought into meshing contact with the opposed [ones of the] involute teeth and [get] <u>become</u> seated thereon[, can be avoided].

page 7, line 20 - page 8, line 5

It is essential that the concave bottom surface of the link plate [is] <u>be</u> formed at a position where its interference with the edges of the sprocket teeth[, which] <u>can be avoided. The interference</u> arises owing to the amplitude of the [chain] <u>chain's</u> polygonal motion upon meshing engagement of the outside tooth faces of the link plate with the sprocket[, can be avoided]. If the concave bottom surface is provided at a position excessively <u>far</u> away from the position where such interference can be avoided, then the distance from the concave bottom surface to the rear part of the link plate and the distance from the pinholes become small, thereby decreasing strength of the link plate. Thus, the concave bottom surface should be provided at a position as close <u>as possible</u> to the position where such interference can be avoided [as possible].

page 9, lines 8-21

By the relation $Hi = Ho+Hs$ established between the inside and outside tooth faces, the inside tooth faces of the link plates [coming from] <u>approaching the sprocket in</u> the tangential direction [of the sprocket] project outward from the outside tooth faces of the overlapping preceding link plates. Even when the sprocket turns half a pitch angle to cause [a chain] polygonal motion <u>of the chain</u> with an amplitude Hs in the course from the start of mesh of the

inside tooth faces to the seating of the outside tooth faces relative to the same sprocket tooth, the inside tooth faces projecting outward from the outside tooth faces preferentially contact the sprocket tooth, so that the distance from the center of the sprocket to the centers of pin holes in the link plates can be always kept constant. This eliminates up and down movements of the silent chain with respect to the sprocket.

page 9, line 22 - page 10, line 8

In addition, the concave bottom surface of the link plate is provided at a position where its interference with the corresponding tooth edge of the sprocket, which results from the amplitude Hs of the polygonal motion of the chain, can be avoided. This enables the link plates, [coming from the] approaching the sprocket in the tangential direction [of the sprocket], to wind around the tooth edges of the sprocket without contacting the concave bottom surfaces defined between the teeth of the link plates. Further, at the seated position, [it is rotated] upon rotation through half a pitch angle, the concave bottom surface of the link plate 100a subsides toward the center of the sprocket S by the amplitude of the chain polygonal motion. [As a result,] This ensures that the outside tooth face of the link plate [can be surely] is brought into a seated position on the sprocket.

page 10, line 9 - page 10, line 21

Furthermore, the tooth edge of the V-shaped link tooth has its profile positioned so that its interference with the confronting root bottom of the sprocket, which results from the amplitude Hs of the polygonal motion of the chain, can be avoided. As a result, the link plate traveling [from a] toward the sprocket in the tangential direction [of the

sprocket] winds around the sprocket with its tooth edge kept away from the root bottom. Upon seating of the link plate on the sprocket as a result of its advance [movement] by half a pitch angle, the tooth edge of the link plate sinks toward the center of the sprocket by a distance corresponding to the amplitude Hs of the polygonal motion of the chain, thereby [causing] ensuring that the outside tooth faces of the link plate [to be surely] are seated on the sprocket.

page 12, lines 3-13

The term "pin center line" used herein represents a line passing over the centers of connecting pins. The term "pitch line of inside tooth faces" used herein represents a line passing parallel to the pin center line over two inside tooth faces of a link plate at points where a distance between those points becomes 1/2 of a chain pitch, which is equal to [a] the distance between two pins of a link plate. The term "pitch line of outside tooth faces" used herein represents a line passing parallel to the pin center line over two outside tooth faces of a link plate at points where [a] the distance between those points becomes 3/2 of the chain pitch.

page 16, lines 10-18

[Free-span] The free-span chain part succeeding to the link plate 100b is pulled tight linearly by [a] chain tension. This state may be regarded as a hob cutter having teeth of trapezoidal cross section formed by a multiplicity of inside teeth surfaces 1 arranged axially of the hob and bulged beyond imaginary profiles symmetrical with the profiles of the outside tooth faces 2. Thus, the free-span chain part and the involute teeth of the sprocket S are placed in a state identical to a well-known state of hobbing using a hob cutter.

<u>page 18, lines 10-27</u>

As shown in FIG. 6, the concave bottom surface 3 of the link plate 100 is provided at a position where its interference with the corresponding tooth edge of the sprocket S, which results from the amplitude Hs of the polygonal motion of the chain, can be avoided. This enables the link plates 100a, 100b, 100c, [coming from] <u>approaching the sprocket S in</u> the tangential direction [of the sprocket S], to wind around the tooth edges of the sprocket S without contacting the concave bottom surfaces defined between the teeth of the link plates. Further, at the seated position, [it is rotated] <u>upon rotation through</u> half a pitch angle, the concave bottom surface 3 of the link plate 100a subsides toward the center of the sprocket S by the amplitude Hs of the chain polygonal motion. [As a result,] <u>This ensures that</u> the outside tooth face 2 of the link plate 100 [can be surely] <u>is</u> brought into a seated position on the sprocket S. Dash-and-dot line S1 in FIG. 6 represents a position of the sprocket S upon commencement of its intermeshing with the link plate 100. Solid line S2 indicates a position of the sprocket S upon seating of the link plate 100 thereon.

<u>page 19, lines 1-14</u>

As can be seen from FIG. 6, the tooth edge 4 of the V-shaped link tooth 10 has its profile positioned so that its interference with the confronting root bottom of the sprocket S, which results from the amplitude Hs of the polygonal motion of the chain, can be avoided. As a result, the link plate 100<u>,</u> traveling [from a] <u>toward the sprocket S in the</u> tangential direction<u>,</u> [of the sprocket S] winds around the sprocket with its tooth edge kept away from the root bottom. Upon seating of the link plate 100 on the sprocket S as a result of its advance movement <u>by</u> half a pitch angle, the

tooth edge 4 of the link plate 100 sinks toward the center of the sprocket by a distance corresponding to the amplitude of the polygonal motion of the chain, thereby [causing] <u>ensuring that</u> the outside tooth faces 2, 2 of the link plate 100 [to be surely] <u>are</u> seated on the sprocket S.

<u>page 19, line 15 - page 20, line 2</u>

As thus far explained, the silent chain power transmission apparatus employs an endless silent chain C which is [comprised] <u>composed</u> of a multiplicity of interleaved link plates each having inside tooth faces profiled such that the distance Hi from the pin center line Lp to the inside tooth face pitch line Li becomes [the polygonal motion amplitude Hs] larger than the distance Ho from the pin center line Lp to the outside tooth face pitch line Lo <u>by an amount equal to the polygonal motion amplitude Hs</u>. Since the thus-arranged silent chain [gets] <u>becomes</u> engaged with the involute teeth of the sprocket S, the chain polygonal motion becomes substantially zero. Further, since the free-span part of the chain is prevented from up and down movements due to the polygonal motion of the chain, because the free-span part of the chain is constantly kept at the height of U throughout the course of meshing engagement of the silent chain C with the involute teeth of the sprocket S.

<u>page 21, lines 11-26</u>

(2) Owing to the relation Hi= Ho+Hs established between the inside and outside tooth faces, even when the sprocket turns half a pitch angle to cause a [chain] polygonal <u>chain</u> motion with an amplitude in the course from the start of mesh of the inside tooth faces to the seating of the outside tooth faces relative to the same sprocket tooth, the inside tooth faces projecting outward from the outside tooth faces

preferentially contact the sprocket tooth. It becomes possible to prevent vertical vibrations of the chain owing to the [chain] polygonal chain motion [to] and thereby decrease undesired vibratory and impact sounds produced upon meshing of the chain with the sprocket, because the distance from the sprocket center to the centers of pin holes in the link plates of the chain is kept at the constant value. This cannot be achieved by the conventional silent chain power transmission apparatus, which is [comprised] composed of link plates having the relation of Hi≤Ho.

page 21, line 27 - page 22, line 17

(3) The concave bottom surface of the link plate is provided at a position where its interference with the corresponding tooth edge of the sprocket, which results from the amplitude of the polygonal motion of the chain, can be avoided. At the seated position, [it is rotated] upon rotation through half a pitch angle, the concave bottom surface of the link plate subsides toward the center of the sprocket by the amplitude of the [chain] polygonal chain motion. [As a result,] This ensures that the outside tooth face of the link plate [can be surely] is brought into a seated position on the sprocket regardless of the occurrence of the polygonal movement of the chain. In addition, since the concave bottom surface is scooped out deeper than the arc-shaped bottom surface of the conventional link plate, the link plate becomes lighter by a weight corresponding to the scooped-out portion. Further, by virtue of the concave arcuate profile of the bottom surface, it becomes possible to [uniformly] disperse stresses applied to the concave bottom surface upon power transmission uniformly, thereby preventing decrease in the strength of the link plate.

page 22, line 18 - page 23, line 7

(4) The tooth edge of the V-shaped link tooth has its profile positioned so that its interference with the confronting root bottom of the sprocket, which results from the amplitude of the polygonal motion of the chain, can be avoided. As a result, the link plate, traveling from a tangential direction [of] toward the sprocket, winds around the sprocket with its tooth edge kept away from the root bottom. It is, therefore, possible to prevent partial wear or chipping of the tooth edges of the V-shaped link teeth and/or the root bottom of the sprocket, thereby improving durability of the silent chain and hence the power transmission apparatus employing the same. In addition, upon seating of the link plate on the sprocket as a result of its advance movement by half a pitch angle, the tooth edge of the link plate sinks toward the center of the sprocket by a distance corresponding to the amplitude of the polygonal motion of the chain, thereby [causing] ensuring that the outside tooth faces of the link plate [to be surely] are seated on the sprocket.